January 1920

Test 039: Avery Six Cylinder Model C

Tractor Museum
University of Nebraska-Lincoln, TractorMuseumArchives@unl.edu

UNIVERSITY OF NEBRASKA
AGRICULTURAL ENGINEERING DEPARTMENT
UNIVERSITY FARM, LINCOLN

Report of Official Tractor Test No. 39

Dates of test July 21 to August 4, 1920

Name, model and rating of tractor Avery Six Cylinder Model "C"

Serial No. Engine GL 2121 Serial No. Chassis 25904

Manufacturer Avery Co., Peoria, Ill.

Tractor equipment used KW Model T. Mag; Kingston Model L. Carb.

Style and dimensions of wheel lugs Spade 2¾" high. 5" extension rims.

Brake Horse Power Tests

Horse Power Developed	Crank Shaft Speed R. P. M.	Length of Test Min.	Fuel Consumption: Kind of Fuel	Fuel Consumption: Amount Used per Hour Gallons	Fuel Consumption: Horse Power Hours per Gallon	Water Consumption Gallons per Hour: In Radiator	Water Consumption Gallons per Hour: In Fuel Mixture	Water Consumption Gallons per Hour: Total	Temperature *Cooling Fluid Deg. F.	Temperature of Atmosphere Deg. F.	Humidity %	Barometric Pressure Inches Mercury
RATED LOAD TEST												
14.08	1252	120	Gaso	2.33	6.035	0.25	0.00	0.25	209	95	41	28.7
	Belt Slippage			1.19%								
VARYING LOAD TEST												
14.43	1255	10	Gaso									
14.69	1250	10	"									
1.70	1435	10	"									
4.12	1424	10	"									
8.00	1385	10	"									
11.59	1343	10	"									
Aver. 9.40	1349	60	Gaso	1.91	4.93	0.50	0.00	0.50	208	95	33	28.7
MAXIMUM LOAD TEST												
14625	1246	60	Gaso	2.39	6.12	0.75	0.00	0.75	208	97	33	28.7
	Belt Slippage			1.28%								
HALF LOAD TEST												
8.09	1398	60	Gaso	1.27	6.35	0.125	0.00	0.125	208	94	34	28.65
	Belt Slippage			0.62%								

*Taken in discharge line from engine.

Remarks Gasoline used for fuel in these brake tests weighed 6.16 lbs per gallon.

Report of Official Tractor Test No. 39

Drawbar Horse Power Tests

Horse Power Developed	Draw Bar Pull Pounds	Speed Miles per Hour	Crank Shaft Speed R. P. M.	** Slippage of Drive Wheels %	Fuel Consumption			Water Used per Hour Gallons	*Temperature of Cooling Fluid Deg. F.	Temperature of Atmosphere Deg. F.	Average Humidity %	Barometric Pressure Inches Mercury
					ind of Fuel Used	Amount Used per Hour Gallons	Horse Power Hours per Gallon					
RATED LOAD TEST. TEN HOURS (9Hr. 55 Min.)												
7.03	1216	2.17	1156	13.6	Gaso	2.52	2.79	0.19	209	80	71	28.8
MAXIMUM LOAD TEST (1st 148.2 ft; 2nd 93.5 ft.)												
7.92	1270	2.34	1275	14.2	Gaso	-----Not Recorded-----			206	86	45	28.7
8.65	1862	1.74	1243	18.8	"	"	"		206	86	45	28.7

*Taken in discharge line from engine.

Remarks **For computing slippage, the circumference of the drive wheels was taken at points of lugs.

Gasoline used in these drawbar tests weighed 6.15 lbs. per gallon.

In the ten-hour test and first maximum test, the tractor was operated in intermediate gear; in the second maximum test the tractor was operated in low gear.

Oil Consumption:

During the complete test consisting of about 44 hours running the following oil was used:

For the engine, 4½ gallons of Mobiloil "A"

For the transmission, ½ gallons of 600W, 1 qt. Mobiloil "BB" in counter shaft.

Report of Official Tractor Test No. 39.

Repairs and Adjustments. Endurance:

Drive chain for belt pulley and belt pulley drive sprocket broke during the brake horse power tests and were replaced with new parts.

The countershaft in the transmission broke during the drawbar test and was replaced with a new shaft. This breakage was evidently due to a flaw in the shaft.

The circuit breaker points were adjusted twice during the test, this adjustment being necessary on account of wear in the roller on the circuit breaker arm.

At the end of the test there were several rollers broken on the drive chain for the belt pulley. Otherwise the tractor was apparently in good condition. With the exceptions of the drive chain for belt pulley and the magneto circuit breaker there was no indication of undue wear in any part nor of any weakness which might require early repairs.

It is our opinion that the repairs and adjustments necessary during this test do not indicate any mechanical defect so serious as to disqualify the tractor.

Brief Specifications Avery Six Cylinder Model "C" Tractor.

Engine: Six cylinder, vertical, L-head. Bore 3", stroke 4", rated speed, 1250 r.p.m.

Chassis: Four wheel, rated speeds: Low 1-5/8 mi. per hr., inter. 2-1/4 mi. per hr., high 4½ mi. per hr., reverse 1-5/8 mi. per hr.

Total weight 3164 lbs.

General Remarks:

In the advertising literature submitted with the application for test of this tractor we find the following statement: "This machine is recommended to burn gasoline, but many burn kerosene with entire satisfaction---" This is not interpreted by us to be a claim that this is a kerosene tractor and therefore it was not operated on kerosene in this test.

We find in this advertising literature some statements and claims which cannot be directly compared with the results of this test as reported above. It is our opinion that none of these statements or claims are unreasonable or excessive.

We, the undersigned, certify that above is a true and correct report of official tractor test No. 39.

Claude K Shedd
Engineer-in-Charge

Oscar W Sjogren
E E Brackett
Fred R Mohaver
Board of Tractor Test Engineers.